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ABSTRACT

The purpose of this study is to determine whether locus of control scores for students in "open" programs changed significantly over a one-year period and whether there was any change different from change experienced by students in a "traditional" program. The lack of significant group main effects indicated that students in the open programs did not acquire a greater sense of internal control for achievement successes or failures than students in a traditional program. (JD)

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A Comparison of Locus of Control in Open and Traditional Elementary Programs

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A Comparison of Locus of Control in Open and Traditional Elementary Programs

Proponents of open education have made various claims about the effectiveness of "open" programs. The stress in these claims has usually been put on affective rather than cognitive growth (Owen, Froman & Calchera, 1974). Various educational critics (Holt, 1964; Kohl, 1969; Silberman, 1970) have asserted that "traditional" educational approaches stifle emotional and affective growth and have called for the implementation of programs such as "open" programs to help remedy this matter.

Several writers (Aldrich, 1972; Owen et al., 1974) have noted that, in spite of all that has been written about "open" education and of its promise for improved affective growth, very little research has been conducted to establish the validity of such a claim. Raschly and Sabers (1974) have noted the strong similarities between the progressive education aims of the past and the goals of today's "open" education. They note that one of the problems which lead to the decline of the progressive movement was failure to document claims for broad social and affective influences upon children. It seems, then, that research into the effects of "open" education upon various areas of affective growth is much needed.

Locus of control (Rotter, 1966) refers to a generalized belief that one's destiny is in his/her hands (internal locus), or controlled by some outside force (external locus) As seen by many of its critics,

traditional education coerces students into behaving as directed by the teacher. In contrast, philosophically open programs encourage students to assume more active roles; to initiate, plan and undertake projects independently; to participate in self evaluation; and to make significant choices about the style and pace of learning. It would seem that the increased student responsibility in an "open" setting would result in a more internalized locus of control. The purpose of the present study was to test the validity of this hypothesis.

Procedures

The Instrument

Following Rotter's original locus of control work a number of scales designed to assess children's locus of control were developed. A recent study by Reimanis (1973) indicated that the presently available instruments each tap somewhat different aspects of locus of control and should not be considered as interchangeable. Since the present study was concerned with locus of control in educational settings the instrument selected for use was a revision of the Intellectual Achievement Responsibility (IAR) Questionnaire (Crandall, Katkovsky & Crandall, 1965). Inspection of items on the various children's locus of control scales indicated that the IAR was the only one oriented solely toward assessing locus of control for academic endeavors.

The IAR is composed of 34 forced-choice items of the type:

> When you do well on a test at school, is it more likely to be . . .
>
> _____a. because you studied for it, or
> _____b. because the test was especially easy?

The 34 items on the scale were designed to sample an equal number of positive and negative events. Thus, the IAR provides an I+ score which indicates the child's belief in internal responsibility for successes and an I- score which indicates her/his belief in internal responsibility for failures.

Since the present study was to involve third through sixth graders, a somewhat shorter instrument which would not tax the limits of the subjects' attention span was deemed desirable. As a result a revised instrument containing 22 items was developed. Because some of the items on the IAR dealt with topics that are foreign to "open" schools, some of the 22 items on the revised scale are slight rewordings of original items; e.g., substituting "project" for the original "test" in the item that appears as item 1 on the revised scale. The 12 items not included on the revised scale were considered inappropriate for a number of reasons; e.g., they involved concepts such as "passing to the next grade," involved words believed to be unfamilar, or involved non-academic situations such as playing cards or checkers. The 22 items were also selected so that half assessed responsibility for successes and half responsibility for failures.

A copy of the 22 item instrument is contained in the Appendix. Each item has been marked as to which response was scored as the internal response and whether the item was scored as part of the positive or negative subscale.

The Sample

The Ss utilized for the present study were enrolled in three schools in the Minneapolis Public Schools. One of the experimental schools (designated in this paper as Open School) was selected because it had just begun operation as an "open" school at the outset of the study. Students enrolled in an "open" program that operated as an option within another school comprised the second experimental group (designated as Open Program). The "open" program in the school had been in operation for one year but had just undergone expansion so that about half of the Ss were in their first year in the program. The control group was comprised of students enrolled in a "traditional" school.

The Minneapolis Public Schools has developed a system of educational alternatives which allows most elementary students and their families to choose their school from among two or more philosophically different options. Consequently, the Ss enrolled in the schools included in the present study were there because they and their family deemed that the most desirable of the available options.

Administration Procedures

The revised IAR scale was group administered by the author or one of two assistants. During the administration, the classroom teacher usually stayed in the rear of the room working on something at his/her desk or performed some other task so as to remain uninvolved with the assessment. For several groups the administration took place outside the regular classroom because not all students in the room were subjects; e.g., in rooms containing second and third graders.

Preliminary research by Crandall, Katkovsky & Crandall (1964) indicated that some third, fourth and fifth grade students were not able to read well enough to take the IAR in written form. To minimize possible bias due to reading ability, examiners in the present study read each item and the accompanying responses as the Ss followed along on their copy. Ss then marked their response choice and the examiner, after scanning the room to see that most Ss had had time to respond, read the next item and responses.

The instructions read by the examiner informed Ss that:

> There are no right or wrong answers to these questions and no one except myself will see your answers so please answer according to what you think.

Students were then asked to listen as each question and the possible answers were read and to choose the answer "that best describes what happens to you or how you feel."

Results

For each item, Ss were allotted one point if they chose the response indicating they accepted responsibility for the event (internal response) and zero points if they chose the external response. Thus, for both the I+ and I- subscales, the greater the score the greater the subject's belief that s/he is responsible for his/her successes (I+) or failures (I-). Each subscale contained 11 items so the maximum possible score on either scale was 11.

Tables 1-4 present the means and standard deviations of the I+ and I- scores for each of the four grade levels included in the study. The

results in the tables are based on only those Ss for whom both pre and post test scores were available.

Insert Tables 1-4 about here

A Group x Sex analysis of variance was performed separately for the I+ and I- pretest scores at each grade level. The results of these analyses failed to reveal any significant differences.

A Group x Sex x Trials repeated-measures analysis of variance was performed separately for the I+ and I- scores at each grade level. For the I+ score these analyses indicated only one significant difference ($p < .05$). This was a significant group x sex x trials interaction at grade 5.

Analyses of the I- scores indicated three significant differences ($p < .05$):

> At grade 4 there was a significant trials main effect with the mean scores indicating a decrease from fall to spring.
>
> At grade 6 significant interactions existed for group x sex and group x trials.

Discussion

Three questions provided the major foci for the analyses performed in the present study:

1. Do "open" programs tend to attract students with a greater sense of internal responsibility for their achievement successes and failures than "traditional" programs?

2. Do students in "open" programs increasingly accept responsibility for their achievement successes and failures?

3. If students in "open" programs increasingly accept responsibility for their achievement successes and failures, do they do so at a different rate than students in "traditional" programs?

With regard to the first question, the absence of significant differences when Group x Sex analyses of variance were performed on the pretest scores indicates that the students enrolled in "open" programs did not initially possess a greater sense of internal responsibility for their achievement successes and failures as compared to students enrolled in a "traditional" program.

Only those Ss for whom pre and post data was available were included in these analyses. Twenty percent of the Ss pretested in the Open School and Traditional School and 37 percent of those pretested in the Open Program were not included in the analyses because they were not present at posttesting. It is possible that had the analyses of pretest scores included all Ss for whom pre data was available, some significant differences might have been found.

As far as student's sense of responsibility for achievement successes (I+) is concerned, the lack of any trials main effects in the Group x Sex x Trials analyses indicates that the Ss involved in the present study did not come to accept greater responsibility over the year's time. The lack of significant group main effects also indicates that whatever changes did occur from fall to spring did not differ from "open" to "traditional." However, graphical analysis of the significant group x sex x trials interaction (Figure 1.) at grade 5 indicated that the mean score for girls in the Open Program decreased from fall to spring while it increased for girls in the other two groups. For boys, the graphical

analysis (Figure 1.) indicates that the mean score for those in the two "open" groups increased from fall to spring but decreased for boys in the Traditional School.

Insert Figure 1 about here

Group x Sex x Trials analyses of the I- scores indicated a significant trials main effect at grade 4 with the mean score decreasing from fall to spring. This indicates that the fourth grade students in the present study accepted less responsibility for their achievement failures at the end of the school year than they did at the beginning. The lack of an accompanying group main effect indicates that the decrease which occurred did not differ significantly according to whether the Ss were in the "open" or "traditional" groups. Graphical analysis (Figure 2.) of the significant group x trials interaction at grade six indicates that the mean score for students in the Open School decreased from fall to spring while it increased for the other two groups.

Insert Figure 2 about here

There are, of course, a number of possible explanations for the failure to find that "open" educational programs produced a significantly greater internalized locus of control for achievement events. Some of the possible explanations follow:

> Locus of control is already well developed by grade 3 so that if the true effects of "open" education on locus of control are to be discovered, research must be focused on younger children.
>
> An eight month period from pre to posttesting is not sufficient time for the "open" programs to affect locus of control.

The paper and pencil instrument utilized does not truly assess locus of control for achievement events.

No measures of program implementation were obtained so there is no assurance that the "open" programs utilized were truly "open" or that they differed from the "traditional" program.

"Open" education cannot be expected to produce differences on such measures as locus of control because different processes do not produce different results.

Conclusion

The lack of significant group main effects in the present study indicates that students in the "open" programs did not acquire a greater sense of internal control for achievement successes or failures than students in a "traditional" program. Additionally, the lack of consistent main effects for sex indicates that acquisition of a sense of internal control of achievement successes or failures is not related to status on that independent variable.

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APPENDIX

NAME_____ AGE_____ GIRL - BOY

1. When you do well on a project at school, is it more likely to be

I+ a. because you worked hard on it, or

___b. because it was especially easy?

2. When you have trouble understanding something in school, is it usually

___a. because it wasn't explained clearly, or

I- b. because you didn't listen carefully?

3. Suppose your parents say you are doing well in school. Is this likely to happen

I+ a. because your school work is good, or

___b. because they are in a good mood?

4. Suppose you did better than usual on something at school. Would it probably happen

I+ a. because you tried harder, or

___b. because someone helped you?

5. If you solve a puzzle quickly, is it

___a. because it wasn't a very hard puzzle, or

I+ b. because you worked on it carefully?

6. Suppose you study to become a teacher, scientist, or doctor and you fail. Do you think this would happen

I- a. because you didn't work hard enough, or

___b. because you needed some help, and other people didn't give it to you?

7. When you learn something quickly in school, is it usually

I+ a. because you paid close attention, or

___b. because it was explained extra carefully?

8. When you find it hard to work arithmetic or math problems at school, is it

I- a. because you didn't prepare well enough before you tried them, or

___b. because the teacher suggested problems that were to hard?

9. When you forget something you heard in class, is it

___a. because the teacher didn't explain it very well, or

I- b. because you didn't try very hard to remember?

10. When you don't do well on a project at school, is it

____a. because the project was especially hard, or

I- b. because you didn't work hard enough on it?

11. If people think you're bright or clever, is it

____a. because they happen to like you, or

I+ b. because you usually act that way?

12. Suppose you don't do as well as usual on something at school. Would this probably happen

I- a. because you weren't as careful as usual, or

____b. because somebody bothered you and kept you from working?

13. Suppose you are showing a friend how to play a game and he has trouble with it. Would that happen

____a. because he wasn't able to understand how to play, or

I- b. because you couldn't explain it well?

14. When you find it easy to work arithmetic or math problems at school, is it usually

____a. because the teacher suggested problems that were especially easy, or

I+ b. because you prepared well before you tried them?

15. When you remember something you heard in class, is it usually

I+ a. because you tried hard to remember, or

____b. because the teacher explained it well?

16. If you can't work a puzzle, is it more likely to happen

I- a. because you are not especially good at working puzzles, or

____b. because the instructions weren't written clearly enough?

17. If a teacher gives your parents a very good report about you, would it probably be

____a. because she liked you, or

I+ b. because of the work you did?

18. When you read a story and can't remember much of it, is it usually

____a. because the story wasn't well written, or

I- b. because you weren't interested in the story?

19. When you read a story and remember most of it, is it usually

I+ a. because you were interested in the story, or

___ b. because the story was well written?

20. Suppose you became a famous teacher, scientist or doctor. Do you think this would happen

___ a. because other people helped you when you needed it, or

I+ b. because you worked very hard?

21. Suppose your parents say you aren't doing well in your school work. Is this likely to happen more

I- ___ a. because your work isn't very good, or

___ b. because they are feeling cranky?

22. Suppose you're not sure about the answer to a question your teacher asks you and the answer you give turns out to be wrong. Is it likely to happen

___ a. because she was more particular than usual, or

I- ___ b. because you answered too quickly?

TABLE 1.

Grade 3 Results

			I+				I-			
			Pretest		Posttest		Pretest		Posttest	
		N	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Open School	Girls	7	7.57	1.13	8.29	1.98	4.86	2.27	4.57	1.27
	Boys	3	8.67	2.08	8.00	1.73	7.67	1.15	6.67	1.53
Open Program	Girls	4	8.50	0.58	7.00	1.63	7.25	1.26	4.25	2.22
	Boys	3	7.67	1.15	9.00	1.00	7.00	1.00	3.00	1.00
Traditional	Girls	7	8.71	2.06	7.86	2.79	6.86	1.35	5.43	2.37
	Boys	3	6.67	1.15	7.67	1.53	8.33	2.89	4.67	3.06

TABLE 2.

Grade 4 Results

			I+				I-			
			Pretest		Posttest		Pretest		Posttest	
		N	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Open School	Girls	17	7.59	1.28	7.65	1.37	6.29	1.90	5.00	2.65
	Boys	13	7.62	1.98	7.00	2.16	6.15	2.51	5.69	1.84
Open Program	Girls	4	6.50	1.29	6.00	1.41	4.75	0.96	4.75	2.50
	Boys	4	7.75	2.22	6.50	2.65	4.75	2.75	4.50	2.38
Traditional	Girls	18	8.00	2.14	7.83	2.33	6.06	2.04	6.17	2.26
	Boys	17	8.06	2.01	7.94	1.95	6.41	2.35	6.18	2.32

TABLE 3.

Grade 5 Results

			I+				I-			
			Pretest		Posttest		Pretest		Posttest	
		N	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Open School	Girls	14	7.57	2.21	8.00	2.51	6.00	2.39	6.93	2.76
	Boys	16	7.75	2.05	8.00	2.03	6.25	2.08	5.69	1.88
Open Program	Girls	3	8.33	0.58	6.67	0.58	6.00	1.00	7.33	2.52
	Boys	2	5.50	0.71	9.00	1.41	3.00	2.83	4.50	2.12
Traditional	Girls	21	7.86	1.65	8.57	0.97	6.86	2.20	6.33	1.96
	Boys	19	8.79	1.44	8.42	1.80	6.68	2.08	6.26	2.75

TABLE 4.

Grade 6 Results

			I+				I-			
			Pretest		Posttest		Pretest		Posttest	
		N	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Open School	Girls	9	8.44	1.67	8.33	2.06	7.00	1.22	6.78	2.33
	Boys	11	8.18	1.94	7.18	2.36	6.36	1.75	4.09	1.87
Open Program	Girls	8	7.25	2.05	7.63	2.83	5.63	2.13	6.13	2.42
	Boys	3	8.33	1.53	8.33	1.15	7.67	0.58	8.67	2.08
Traditional	Girls	20	8.75	1.86	8.30	2.25	6.20	2.31	6.85	2.64
	Boys	28	8.75	1.76	8.75	1.99	5.39	2.50	5.79	1.73

FIGURE 1.

Grade 5 I+ Group x Sex x Trials Interaction

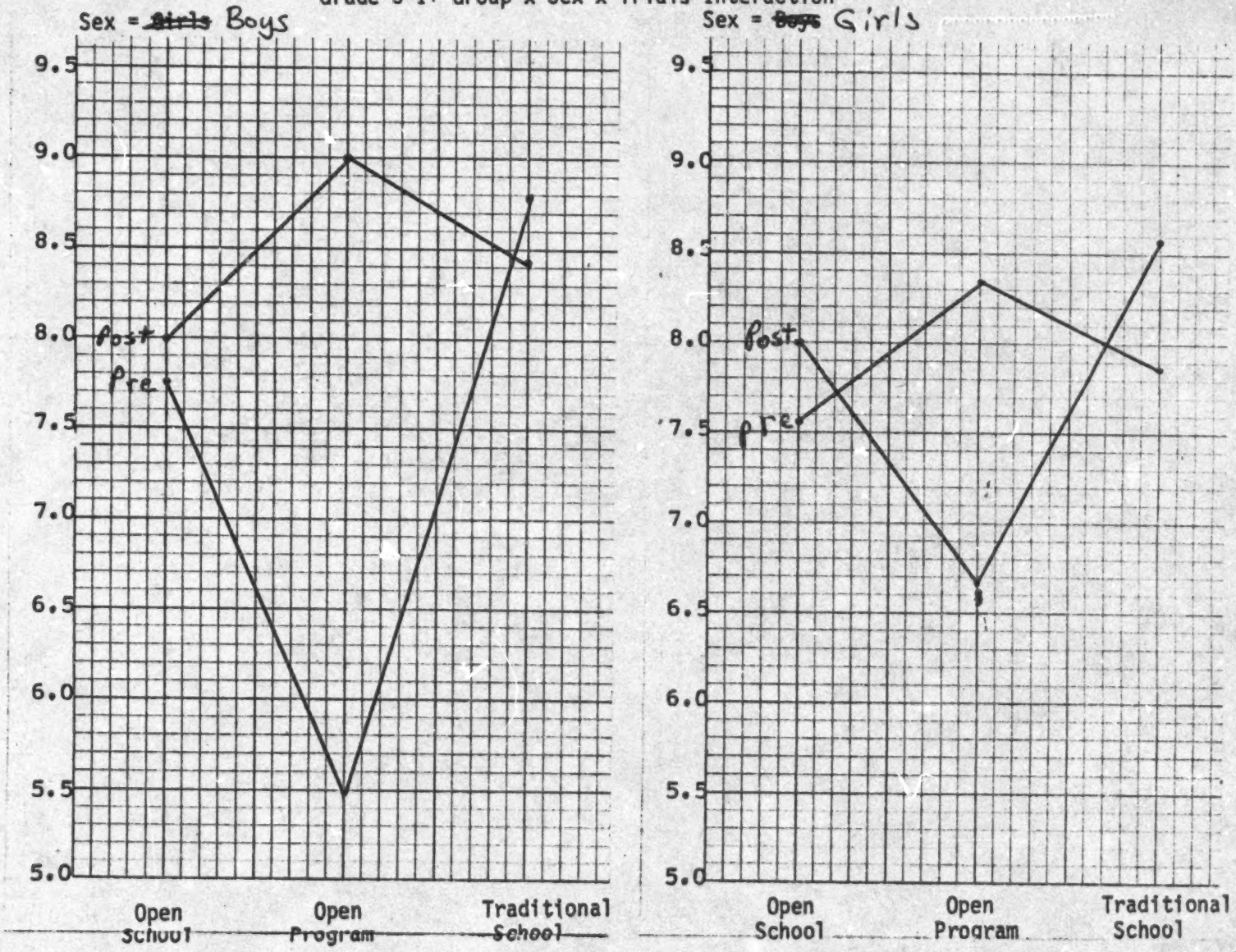

FIGURE 2.

Grade 6 I- Group x Trials Interaction